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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/603,637	06/25/2003	Franklin R. Smith	BW-DKT02095A	4043
32175	7590	02/05/2004	EXAMINER	
BORGWARNER INC. POWERTRAIN TECHNICAL CENTER 3800 AUTOMATION AVENUE, SUITE 100 AUBURN HILLS, MI 48326-1782			CHANG, CHING	
			ART UNIT	PAPER NUMBER
			3748	

DATE MAILED: 02/05/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/603,637

Applicant(s)

SMITH, FRANKLIN R.

Examiner

Ching Chang

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>06252003</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. ***Claims 1-3, and 5-6 are rejected under 35 U.S.C. 102(e) as being anticipated by Ogawa (US Patent No. 6,477,996).***

Ogawa discloses a VCT mechanism (B) for adjusting and maintaining an angular relationship between a camshaft (10) and a crank shaft (connected to 31a) or another shaft (See Fig. 2) using a pressurized fluid (C), the VCT mechanism having a phaser using the pressurized fluid for adjusting and maintaining the angular relationship, the pressurized fluid flows from a fluid source (110) to a fluid sink (120), the VCT mechanism comprising: a locking pin (61; 62) being disposed to engage a recess (21f; 21g), wherein the pressurized fluid is allowed to flow therein, to thereby disengage the locking pin from the recess; a spool valve (100, 104) controlling the flow of the pressurized fluid for adjusting and maintaining the angular relationship, and an extra

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land (104a-104e) disposed to control the timing of the pressurized fluid flowing from the fluid source toward the recess and from the recess toward the fluid sink; and a set of passages (101, 102, 106, 107, 104f, 104g, 104h, 104i, 104j, 104k) disposed to have fluid flowing therein, the set of passages including: a first passage (106) disposed to have fluid flowing therein, the first passage having a first end disposed to be in fluid communication with the fluid source and a second end; a second passage (101) disposed to have fluid flowing therein, the second passage having a first end disposed to be in fluid communication with the second end of the first passage, the second passage further having a second end in fluid communication with the recess, and a third passage (107) disposed to have fluid flowing therein, the third passage having a first end disposed to be in fluid communication with the first end of the second passage, the third passage further having a second end in fluid communication with the fluid sink; wherein the spool valve is disposed to control the fluid communication between the first end of the second passage and the second end of the first passage; wherein the spool valve is disposed to control the fluid communication between the first end of the second passage and the first end of the third passage (See Figs. 5-11); wherein the set of passages are disposed to be in fluid communication with an advance chamber (R1) and a retard chamber (R2) of the phaser.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. ***Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ogawa (as applied to claim 1 above) in view of Gardner et al. (US Patent Application No. US 2003/0033998 A1).***

Ogawa discloses the invention, however, fails to disclose the said spool being center mounted within the phaser.

The patent to Gardner on the other hand, teaches that it is conventional in the VCT systems art, to utilize a center mounted spool valve (20) within a phaser (See Figs. 4-5).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have utilized the center mounted spool valve as taught by Gardner in the Ogawa device, since the use thereof would provide an improved variable valve timing mechanism.

The applied Gardner reference has a common assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art only under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 103(a)

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might be overcome by: (1) a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not an invention "by another"; (2) a showing of a date of invention for the claimed subject matter of the application which corresponds to subject matter disclosed but not claimed in the reference, prior to the effective U.S. filing date of the reference under 37 CFR 1.131; or (3) an oath or declaration under 37 CFR 1.130 stating that the application and reference are currently owned by the same party and that the inventor named in the application is the prior inventor under 35 U.S.C. 104, together with a terminal disclaimer in accordance with 37 CFR 1.321(c). For applications filed on or after November 29, 1999, this rejection might also be overcome by showing that the subject matter of the reference and the claimed invention were, at the time the invention was made, owned by the same person or subject to an obligation of assignment to the same person. See MPEP § 706.02(I)(1) and § 706.02(I)(2).

5. ***Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ogawa (as applied to claim 1 above) in view of Linder (US Patent No. 5,386,807).***

Ogawa discloses the invention, however, fails to disclose the VCT mechanism being a CTA VCT system.

The patent to Linder on the other hand, teaches that it is conventional in the cam torque actuated phaser art, to utilize the camshaft (4) torsional energy conversion mechanism (See Figs. 1A, 1B, and 3) to recirculate the pressurized oil between working

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chambers (6.1, 6.2, 7.1, 7.2, 8.1, 8.2, 9.1, and 9.2), in order to continuously adjust an angular orientation of the camshaft to the crankshaft of an engine.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have utilized the camshaft torsional energy conversion mechanism as taught by Linder in the Ogawa device, since the use thereof would provide an improved VCT system with a camshaft torsional energy conversion mechanism.

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- Takahashi et al. (US Patent No. 6,526,930).

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ching Chang whose telephone number is (703)306-3478. The examiner can normally be reached on M-Th, 7:00 AM -5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas Denion can be reached on (703)308-2623. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Patent Examiner



Ching Chang



THOMAS DENION
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 3700